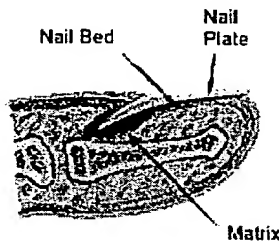




American College of Foot and Ankle Surgeons

Nail Disorders and Treatments

Early Care is Best for Nail Health

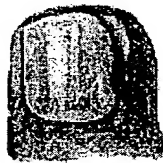


In their protective role, nails bear the brunt of daily activities. Walking, running, wearing shoes or participating in sports are just a few of the stresses and strains the feet must endure. All or a portion of the nail plate can be damaged when the feet are injured or abused.

Nail problems are commonly caused by improper trimming, minor injuries or repeated trauma. Some nail disorders can also be congenital.

Proper trimming (along the contour) on a regular basis can help keep the toenails in the pink, as can wearing well-fitted, low to moderately heeled shoes.

Nail Problems And Their Care



Ingrown Nail

Painful ingrown nails may be congenital, caused by an overcurvature of the nail, or an imbalance between the width of the nail plate and the nail bed.

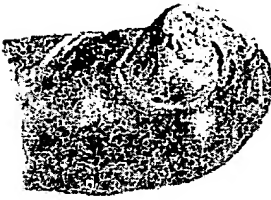
Toe injuries that change the nail's contour also can lead to an ingrown toenail. Toe deformities (such as a bunion that forces the big toe to lean toward the second toe), high-heeled or narrow, pointed shoes can put pressure between the nail and soft tissues, eventually forcing the nail to grow into the skin.

Symptoms: Redness, swelling and infection make the toe very painful.

Ingrown nails can be accompanied by other toe disorders, such as excess surrounding tissue or an outgrowth of bone beneath the nail.

Treatments for the Ingrown Nail

Surgery is often necessary to ease the pain and remove the offending nail. Only a portion of the nail may be removed. If the entire nail is affected or there is a severe nail deformity, the nail plate and matrix (the cells that grow the nail) may be completely removed (see "Surgical Treatments for Nail Disorders").



Fungal Infections

Various types of fungi are present everywhere in the environment. The dark, moist surroundings created by shoes and stockings make the feet especially susceptible to fungal infection.

Most fungi are harmless until they penetrate the skin. A fungus can invade through minor cuts, or after injury or repeated irritation to the toes have caused the nail to separate from the bed.

Fungal infections of the nail plate and nail matrix are quite common.

Symptoms: Fungus may cause the nail to thicken and become yellow or brownish. As the fungus grows, foul-smelling, moist debris can be seen. Pressure from a thickened nail or the build-up of debris may make the toe painful.

Treatments for Fungal Infections

Treatment is best begun at the early stages of infection. The accumulation of debris under the nail plate can lead to an ingrown nail, or to a more serious bacterial infection that can spread beyond the foot.

To reduce pain associated with a thickened, infected nail, the surgeon may reduce its thickness by **filing the nail plate** down with a surgical burr.

Filing will not, however, prevent the infection from spreading.

Oral and topical medications may be prescribed when:

- Only a small portion of one nail is infected
- Several nails are affected
- Keeping the nail is desired

Medication may or may not completely eliminate the fungus. Often, after medication is discontinued, the fungus recurs. Your podiatric surgeon will monitor the results of oral prescriptions carefully, and will explain any possible side effects.

While **topical ointments** usually do not eliminate the fungus, they may be effective when used directly on the nail bed, after the nail plate has been removed.

Eliminating the infection, in some cases, can only be achieved by **permanent removal of the nail plate** (see "Surgical Treatments for Nail Disorders").

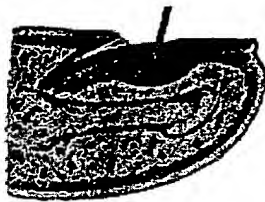
Blood Beneath The Nail



A very common result of active lifestyles is blood, or a hematoma, beneath the toenail. Hematomas are especially common among people who jog or play tennis, caused by the toes repeatedly rubbing against the shoe.

A hematoma might indicate a fractured bone, especially after an injury (such as dropping a heavy object on the end of the toe). The toe should be examined by the podiatric surgeon, who may take an X-ray to determine the most appropriate treatment.

Hematoma Treatments



If the hematoma is treated within the first few hours of forming, the podiatric surgeon will create a tiny hole in the nail plate using a fine-point drill or scalpel. This releases the blood and relieves pain.

If several days have passed and the blood clot becomes painful, the nail plate may require removal so that the nail bed can be cleaned. Some podiatric surgeons prefer to remove the nail plate whenever blood forms beneath it, because the blood can attract fungi and lead to infection.

The nail may also be removed to treat a bone fracture beneath the hematoma. If the bone has fractured but has not moved out of its normal position, a splint may be used to keep the toe aligned during healing.

Nail plates that have been removed will grow again within three to six months.

Surgical Treatments For Nail Disorders

If the problem is severe or chronic, surgery to remove all or a portion of the nail may be recommended.

Most surgeries are performed very comfortably under local anesthesia, and require less than one hour at the podiatric surgeon's office. Laser surgery, because it requires special equipment, may be performed at a hospital.

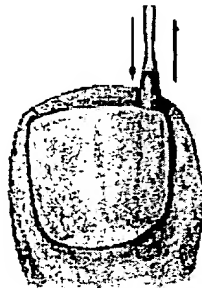
Partial Nail Removal

For some cases of ingrown nails, only the portion of nail that is growing into the skin is removed. If both sides of the nail are ingrown, they may be removed during one procedure.

After the affected portion of nail (one-eighth to one-quarter inch) is taken, the nail bed is removed along with any enlarged tissue adjacent to the nail plate. The nail root and matrix are then destroyed by phenol, surgical removal or laser heat (see "*Permanent Nail Removal*"). Finally, the skin may be remodeled around the nail.



Permanent Nail Removal



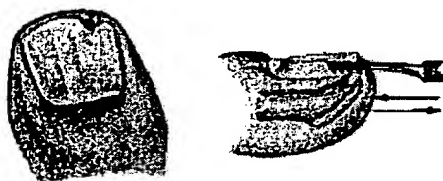
Complete removal of the nail plate is a common remedy for fungal infections and ingrown nails.

During this procedure, the nail plate is removed and the nail matrix is destroyed by one of three methods:

- Phenol - An acidic chemical called phenol is applied only to the nail matrix. This destroys the growth cells of the nail.
- Surgical removal - The nail matrix and bed is cut away. Stitches are only occasionally necessary.
- Laser - A form of burning in which laser heat is focused on the matrix cells.

Removal of Bone Overgrowth

Bone directly beneath the nail plate may become enlarged, developing a spur or outgrowth that can deform the nail plate or lead to an ingrown nail.



Removal of excess bone may be performed concurrently with surgery to partially or permanently remove the nail plate.

Care After Surgery

Most people experience very little pain immediately following nail surgery, and during the healing process, which lasts approximately two to three weeks. If bone has been removed during surgery, a longer healing process should be anticipated.

Total Nail Removal/Partial Nail Removal

The podiatric surgeon may prescribe medication for pain, and may, but not always, advise that the toe be soaked two or three times daily for one week. Some amount of drainage is normal when the nail has been removed chemically or by laser. If the nail has been partially

removed and stitches were used to form a new nail fold, they are removed in approximately 10 days.

Ingrown Nail

Daily soaking in a saline solution may be recommended. If the toe is inflamed or infected, a topical antibiotic is applied for three to seven days; if the infection is severe, an oral antibiotic may be prescribed. In very few cases, the infection may invade the bone beneath the nail, requiring hospitalization and further treatment. The healing process generally does not interfere with daily activities.

Hematoma

Following simple drainage of a hematoma, the podiatric surgeon may advise that the toe be soaked and treated with topical antibiotics.

How Will The Toe Look After Surgery?

After surgery to permanently remove the nail plate, the body generates a hardened skin covering over the sensitive nail bed. When this covering has developed, normal activities can be resumed. Women can also use nail polish on this area.

Will The Nail Regrow After Removal?

Partial growth of the nail plate after permanent removal is rare, but possible. Because the nail matrix has been destroyed, the nail should not grow again.

While these are some of the most commonly prescribed treatments for nail disorders, others may be used. The podiatric surgeon will determine which treatment is likely to be the most successful in each case.

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